

What is Claimed is:

- Sub B1
1. A method for determining the aggressiveness of a prostate carcinoma comprising:
 - (a) obtaining a sample of the prostate carcinoma; and
 - (b) detecting the presence of p27 protein in the prostate carcinoma, the absence of p27 indicating that the prostate carcinoma is aggressive.
 2. A method for diagnosing a benign prostate hyperplasia comprising:
 - (a) obtaining an appropriate sample of the hyperplasia; and
 - (b) detecting the presence of the p27 RNA, a decrease of the p27 RNA indicating that the hyperplasia is benign.
 3. A method of claim 2, further comprising detecting the protein expression of p27 wherein this additional step may be performed before or after the detection of the presence of the p27 RNA.
 4. A method for predicting the life-span of patient with prostate carcinoma comprising:
 - (a) obtaining a sample of the prostate carcinoma; and
 - (b) detecting the presence of p27 protein in the prostate carcinoma, the presence of the p27 protein indicating that the patient can live longer than the patient who are undetectable p27 protein.
 5. A method for increasing the life-span of patient with

~~prostate carcinoma comprising inducing the expression
of p27 protein in the prostate carcinoma.~~

- 5 6. A method for prolong life-span of patient with
prostate carcinoma which comprises introducing a
nucleic acid molecule having sequence encoding a p27
protein into the carcinoma cell under conditions
10 permitting expression of said gene so as to prolong
the life-span of the patient with said prostate
carcinoma.
7. The method of claim 6, wherein the nucleic acid
molecule comprises a vector.
- 15 8. The method of claim 7, wherein the vector is an
adenovirus vector, adenoassociated virus vector,
Epstein-Barr virus vector, retrovirus vector or
vaccinia virus vector.
- 20 9. A method for prolong life-span of patient with
prostate carcinoma which comprises introducing an
effective amount of p27 protein into the carcinoma
cell so as to thereby prolong the life-span of the
patient with said prostate carcinoma.
- 25 10. A method for prolong life-span of patient with
prostate carcinoma which comprises introducing an
effective amount of a substance capable of stabilizing
30 the p27 protein into the carcinoma cell so as to
thereby prolong the life-span of the patient with said
prostate carcinoma.
- 35 11. A composition for prolong life-span of patient with
prostate carcinoma which comprises an effective amount
of a nucleic acid molecule having sequence encoding a

p27 protein and a suitable carrier.

12. A composition for prolong life-span of patient with prostate carcinoma which comprises an effective amount of the p27 protein and a suitable carrier.

13. A composition for prolong life-span of patient with prostate carcinoma which comprises an effective amount a substance capable of stabilizing the p27 protein and a suitable carrier.

14. A method for determining the rate of proliferation of a prostate cancer comprising:

- (a) obtaining a sample of the prostate cancer; and
- (b) detecting the presence of p21 protein in the prostate cancer, the presence of p21 indicating that the prostate cancer will have a high proliferation rate.

15. A method for determining the rate of proliferation of a prostate cancer comprising:

- (a) obtaining a sample of the prostate cancer; and
- (b) detecting the mdm2 expression in the prostate cancer, the overexpression of mdm2 indicating that the prostate cancer will have high proliferation rate.

16. A method for determining whether a prostate cancer would be metastatic comprising:

- (a) obtaining a sample of the prostate cancer; and
- (b) detecting the level of cyclin D1 expression in the prostate cancer, the overexpression of cyclin D1 indicating that the prostate cancer will be metastatic.

17. The method of claim 16, wherein the prostate cancer is metastatic to bone.

18. A method for determining the tumor recurrence in prostate cancer comprising:

- (a) obtaining a sample of the prostate cancer; and
- (b) detecting the expression of the cyclin-dependent kinase inhibitor p16 in the prostate cancer, the overexpression of p16 indicating that the prostate cancer will have high tumor recurrence.